

Translation

PATENT COOPERATION TREATY

PCT/EP2003/012841



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2781_M PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/012841	International filing date (day/month/year) 17 November 2003 (17.11.2003)	Priority date (day/month/year) 18 November 2002 (18.11.2002)
International Patent Classification (IPC) or national classification and IPC F16D 65/56		
Applicant KNORR-BREMSE SYSTEME FÜR NUTZFAHRZEUGE GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 07 June 2004 (07.06.2004)	Date of completion of this report 23 August 2004 (23.08.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/012841

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-7 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____ 1-10 _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the drawings:
pages _____ 1/2-2/2 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/12841

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

1. With respect to claim 1:

Claim 1 meets the requirements of PCT Article 33(2) to (4) for novelty, inventive step and industrial applicability.

Since none of the documents cited in the search report or acknowledged in the introductory part of the description indicates the features of independent claim 1 in their entirety, the subject matter of claim 1 is novel.

2. DE 94 22 342 U1, which represents the closest prior art, shows:

a disc brake, in particular for a commercial vehicle, with a brake caliper encircling a brake disc, said caliper being fastened to a backing plate axially displaceably in relation to the brake disc and an actuating device being arranged on a side of said caliper, with a displaceable element, in particular a crossmember, which has at least one threaded bore into which an adjusting spindle is screwed which supports a pressure member by means of

which a brake shoe may be pressed against the brake disc, with an adjusting device operatively connected to the adjusting spindle by means of which a wear-related change in the play between the brake shoe and the brake disc can be substantially compensated for, and with a safety element acting on the adjustment spindle to limit rotation until a predetermined torque is reached.

The safety element consists of a secondary seal which is arranged in the terminal area of an adjusting spindle facing the pressure member and protectively engages the adjusting spindle. The secondary seal consists of a plastics sleeve which can be pretensioned by a compression spring and which on its opposite face rests on a carrier of the adjusting spindle and whereby a rotation-limiting action is produced in this area.

The problem may be considered to consist in the complicated design and limited reliability of the safety element.

The problem is solved by providing the safety element in the form of a lock washer which lies in an annular groove of the threaded bore or the adjusting spindle and rests resiliently on the opposite thread.

None of the citations in the search report shows a lock washer which lies in an annular groove of a bore or a spindle.

The disc brake with the rotation-limiting adjusting device as per claim 1 therefore involves an

inventive step.

The subject matter of claim 1 may be made and used industrially and is therefore industrially applicable.

3 With respect to claims 2-10:

Dependent claims 2-10 contain advantageous and non-obvious embodiments of a disc brake according to claim 1. Claims 2-10 therefore likewise meet the requirements of PCT Article 33(2) to (4) for novelty, inventive step and industrial applicability.